ROAD IMPROVEMENT.

DOWN WITH THE TAX ON MUD.

In every state,
From Golden Gate,
To Pass'maquoddy bay;
Travel and trade
Are sore delayed,
By mud and rude highway.

With half a load,
O'er muddy road,
The farmer drags his way;
And wonders why
When roads were dry
He had no calls for hay.

The good M. D.
Spends many a te*
To pay for wheel and tire;
Patrons get sick,
If roads are thick
And "up to the hub" with mire.

The dominie,
With 'pointments three
On Sunday—miles apart—
In miry clay,
Plods all the way—
Who needs more grace of heart?

"DOWN WITH THE TAX ON MUD."

Five days each week,
The schoolma'm meek
Trudges in slush to school;
Pays half her dues,
For overshoes
Stuck fast and lost in the pool.

The village beau,
New rig to show,
With "best girl" takes a ride:
But swift breakdown
Or broken crown,
Dampe youthful joy and pride.

The cyclist, thrown
By rut or stone,
Into a wayside slough;
Tho' quick and strong,
From cycling long,
Just barely scrambles through.

ENVOY.

Taxpayers all,
Both great and small,
Unite for public good,
With one accord,
Pass on the word
And "down the tax" on mud.
—Clementine Cole, in Good Roads.

BRIDGES AND SLUICES.

Great Improvement Noticeable in Their Construction.

During the past ten years there has been a great improvement in the construction of small bridges and sluices, especially as regards efficacy and durability. The improvement consists mainly in the use of vitrified sewer pipe, which, if properly placed in position, will be found in good condition after many years, while the common wooden and stone sluices, as usually constructed, need more or less attention after a time.

When the old wooden or stone sluice is one foot square, a sewer pipe ten inches inside diameter will remove the water equally as well, as there is comparatively no friction and no impediment or stoppage as by the old process, as the water glides noiselessly through on the smooth, glazed surface. The chief points to be observed in the use of these pipes is to have the upper surface of the pipe at least one foot below the surface of the roadway, and that the discharge or outlet end be at least four inches lower than the upper or inlet. Also that when discharged the water flows off freely, and does not back up into the pipe. Danger from the latter need only be feared during winter.

It is not an uncommon thing to see sluices and bridges of pipe where the water has formed a channel alongside the pipe, and the earth has caved in from the road surface. This, of course, shows faulty construction, stones and pieces of the old sluices having been placed in contact with the outer surface of pipe, and during high water none of its finds its way along the interstices thus formed, and soon enough soil is removed to cause trouble. Hence never place stone or wood in such positions, but fill in with earth firmly rammed.

For bridges, or where the pipe is over a foot in diameter, the bank upon the inlet side should be laid up with

SEWER PIPE BRIDGE WITH MASONRY EMBANKMENT.

stone or brick, using water lime or cement for the purpose, as shown in the illustration. Where the filling above the pipe is from four to ten feet, this wall will generally be found cheaper than purchasing three or four extra lengths of pipe, and hauling the earth necessary for a sloping bank. A stake driven firmly in the channel of a stream, about two feet from the inlet, will catch all flood-wood and debris and prevent the clogging of the pipe. This is seemingly a small matter, but it is a very important one.—L. M. Shook, in American Agriculturist.

Road Building in France.

Great attention is given to roads in France. They are never allowed to get out of repair. The entire country is divided into districts, each one in charge of a supervisor, who is provided with a residence at government

MACADAM ROADS.

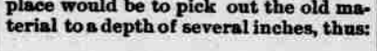
Many Are Spoiled by Men Who Do Not Know How to Repair Them.

We copy the following article (re-engraving the cuts) from the useful monthly called Good Roads:

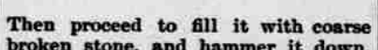
Suppose you had a pair of boots which needed half-soling, and the shoemaker returned them to you just as they were, except that he sent two pieces of sole leather and instructed you to hold them on the soles until they became permanent. Now you think the above a very absurd supposition, and yet if you are a taxpayer you are helping to pay for just such repairing, only it happens to be on roads which are partly yours instead of boots which you alone have to wear.

After years of agitation you succeed in getting a decent macadam road, (this is assuming a great deal, but we must start with something). It lacks, however, one very desirable quality—it isn't waterproof; so in time the rain soaks into it and finds the most porous spots and the settling begins. The road often settles before the town does. As soon as a low spot begins to develop, it catches more water and that soaks the earth underneath still more, and the low spot sinks still lower until it gets almost as low as some of the polities which prevent its repair.

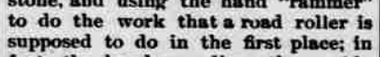
"Veri as" notices it and writes to a local paper; the next week "Old Subscriber" takes it up, and finally "Taxpayer" is heard from. Then the editor "suggests" that it ought to be attended to. And in time (generally just before election time) the case is acted upon. When the street was first finished it looked like this:



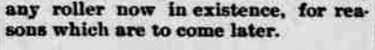
But on account of the process above described it gradually assumed a shape more like this:



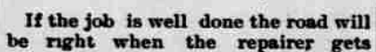
Then after the "boys" had been there with a tipcart load of material and dumped it, the place looked like this:



Travel on the road continues and in a few days the place looks like this:



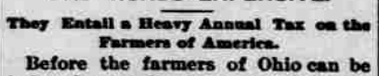
Finally "taxpayer" comes along with a high-priced horse and he (the horse) strikes one of the dislocated stones like this:



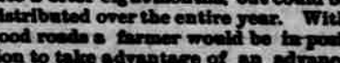
But never mind the horse; we can afford to let the veterinary journals look after him.

"Taxpayer" saw it, but he didn't notice it, and if he did he only thought that it was not more his street than it was his neighbor's street, and why should he trouble about it; and when next he was called upon to vote for a lot of town officers he either didn't vote at all, or if he did vote it was for the same ones, because, you see, they had had the "experience."

If it is right for the shoe-repairer to finish repairing your boots, it is just as proper to expect the road-repairer to finish his work as to not only leave it undone but in many cases make it actually worse than before. The proper thing to be done in repairing such a place would be to pick out the old material to a depth of several inches, thus:



Then proceed to fill it with coarse broken stone, and hammer it down, afterward filling in the top with finer stone, and using the hand "rammer" to do the work that a road roller is supposed to do in the first place; in fact, the hand pounding, thoroughly done, will make a harder road than any roller now in existence, for reasons which are to come later.



If the job is well done the road will be right when the repairer gets through with it, and a carriage will pass over it with the same smoothness as over a new road.

BAD ROADS EXPENSIVE.

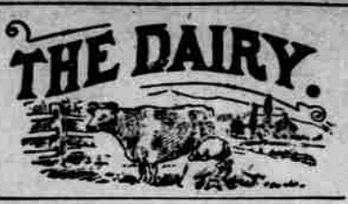
They Entail a Heavy Annual Tax on the Farmers of America.

Before the farmers of Ohio can be induced to girdle the state with pikes that will cost from three to five thousand dollars per mile, they must be assured that it will pay in dollars and cents the men who bear the burdens of taxation. That it will do so there is no reasonable doubt in the minds of thoughtful men, provided honest and capable workmen are employed, especially if the farmers can work out their own share with teams at dull seasons of the year.

Right thinking people are agreed that the heaviest tax the farmers pay is the tax of bad roads. Aside from the discomfort which they cause, bad roads are an insuperable bar to social and commercial intercourse, and subject the farmer to enforced idleness at a season of the year when much necessary hauling could be done that would greatly relieve the press of work at seed time and harvest. With good roads, farm work need not be crowded into a brief eight months, but could be distributed over the entire year. With good roads a farmer would be in position to take advantage of an advance in any article of produce which, under existing circumstances, he is obliged to hold until the mud blockade is lifted. It is no exaggeration to say that the loss a farmer sustains by reason of bad roads—aside from the discomfort—would pay a heavy annual tax for the construction of good roads.—Ohio Farmer.

Soot is valuable as a fertilizer in the garden, and when used in the soil of flower pots acts as an insecticide.

THE DAIRY.

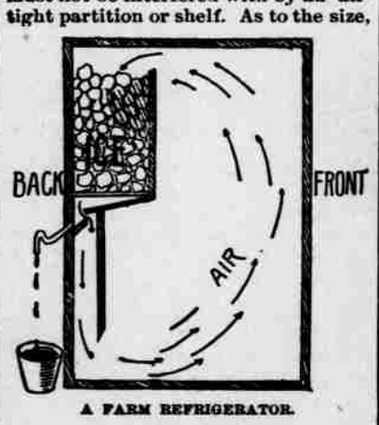


FARM REFRIGERATOR.

Diagram Showing the Principles Upon Which It Is Built.

The illustration is not a completed refrigerator, but a diagram showing the principles upon which they are built and from it anyone can tell what to buy to suit his needs. If he cannot suit himself in that way he can make one of his own. It is intended to be used with ice. If rightly constructed, the air in a refrigerator will be dry, as well as cold, and one is as necessary as the other to adapt it to family use. If the cold air be moist, a slime will gather upon the perishable substances and destroy their flavor. Even eggs will not keep in a refrigerator unless the air is dry, and formerly large quantities of chemicals were employed to absorb the moisture. These chemicals were regularly carried out and dried in the sun. Fruits, vegetables and meats also require a dry air. It has been found that the simplest way to dry the air is to bring it in direct contact with the ice. A current is formed, either mechanically or naturally, the air is brought in contact with the ice and its moisture is condensed upon the ice, passing off with the drip.

Two things are required for good and economical work: One is that there be no cold metallic surfaces, for such surfaces will also condense moisture although then it remains in drops and is partially reabsorbed by the air. The other point is to prevent the admission of outside air. If properly constructed and no outside air admitted, the air moves in a current and is kept dry, as well as cold, by constant contact with the ice. To prevent the admission of outside air, the drip pipe which carries out the water from the melted ice must have a "trap" in it—that is, a depression which will always be filled with water, so as to keep air from entering. The theory of the circulation is as follows: Cold air is heavier than warm and will descend. As the air in contact with the ice descends, other air takes its place, the warmer rising because it is lighter. All the descending air is cooled and dried by the ice and it pursues its course cool and dry. Of course the portion that is in direct contact with the ice is coldest and therefore heaviest. It is constantly falling thus keeping up the circulation. It is evident that the shelves should be few and that these must have openings to permit the air to ascend. The arrows show clearly the natural circulation of the air, and it must not be interfered with by an air-tight partition or shelf. As to the size,



A FARM REFRIGERATOR.

that depends upon circumstances, the same as the size of a cornfield or a barn. The essentials are shown by the cut and foregoing description. The drip pipe of course starts just below the ice, and conveys the water to the outer air. The ice rests on slats so the air can pass down through it to the bottom and the drip shelf must not close the channel through which the air descends. It is considered that broken ice is more effective than the same quantity in one large chunk, a number of pieces giving the greater amount of surface.—Orange Judd Farmer.

DAIRY PHILOSOPHY.

A PERMANENT pasture should signify permanency of good feed.

TAKE good care of the young cows, that they may continue profitable when they are old.

LEAD a cow rather than drive her. Gentleness should be the watchword to the dairy stable.

THE whey following a good cheesemaker's work is poor feed for pigs, as it contains but little casein, or butter fat.

THE dairyman with a good well and a windmill can feel about as independent as the one who has running water on his farm.

WHEN you strip a cow's teats to the last drop in milking, do it not so much for the immediate gain as to keep the udder of prolific habit in the future.

THE merciful dairyman when he draws calves to market puts them in a comfortable crate, instead of tying their legs and doubling them under the wagon seat.

TO MAKE the cow truly profitable, you must maintain her milk yield along natural lines of feeding. Indulgence in freaks of food stimulation does cows more harm than good.

WHILE dairy animals need shade in summer as much as shelter in winter, it should not be so extensive in the pasture as to interfere with the natural development of nutritious grass.

THE wise dairyman who does not turn his cows out to pasture in the spring till it is of sufficient growth to support them, gets quality in the feed, which is of as much importance as quantity.

THE cow that must graze industriously half the summer to recover physically what she has lost by indifferent keeping through the winter, is not apt to earn a dollar in real profit for her owner.—George E. Newell, in American Agriculturist.

A PET JERSEY BULL.

How an Intelligent Farmer Tamed the Head of the Herd.

Much has been said and written about viciousness in bulls, which, to a more or less degree, will hold good; but a great deal of this peculiarly bad trait in their characters could be eliminated, were the proper means resorted to. The bull is a gregarious animal; he likes not to be alone, and one of the greatest stimulants to engender a cranky, vicious nature in him is to keep him secluded, to isolate him from his world, so that he sees none of his kind and hears only the voice of his attendant. My own experience in the treatment of a two-year-old bull, with seven-eighths Jersey blood in him, and the result obtained therefrom, may be interesting as demonstrating some of the more docile traits in the animal's nature.

During the winter months I kept the bull in a stable where the young stock were wintered, feeding him on the same rations as the latter received, and driving him out to water along

A PET JERSEY BULL.

with his companions. He was always tractable, never fractious, and showed no disposition to separate himself from them. As soon as the cows were let out to pasture he was allowed to go with them wherever they went, except into the yard where they were milked. At the end of three months I installed him in one of the corners of the cow stable, where he was kept until it was time to bring the herd inside, when he was removed to another stable by himself. During the period of his incarceration in the cow stable, he was well looked after, kept scrupulously clean by being supplied daily with bedding material, fed and watered regularly. Here he was as "gentle as a lamb." When leading the bull to and from water, I have at times done so by simply taking hold of his horn, and at no time did I employ any means other than the device shown in the accompanying illustration, which obviates the use of a halter, being more speedily adjusted and just as secure. It consists of a piece of rope with a loop at one end, which is thrown over one horn, a half hitch being made around the other horn, thus firmly securing the rope, for the more the animal pulls the tighter the rope is drawn. This same device was used in tying him in the cow stable, when the cows were outside, thus allowing him the freedom of walking around to the "end of his tether," he, of course, being fastened in the stanchions while the cows were being milked. The statement has been advanced that the bull should never be petted, as that course has a tendency to lessen his virility. Be that as it may, this Jersey was petted and apparently liked to be so, and no trouble was ever experienced in the lines indicated. I had a herd of thirty cows and his offspring in each case was always healthy and strong, and never did his efforts prove abortive. He knew his name, answering to it whenever called, and he would come to eat salt, a potato, or a little silage out of my hand. It may be that this Jersey was an exception to the average bull, but I think the care and kind treatment he received was what made him so gentle and docile.—Alex Wallace, in American Agriculturist.

Why Some Dairymen Fail.

One source of great loss is lack of skill in breeding. As far as possible the producer of milk should put the finished product into the hands of the consumer, for it is the finished product that gives the profit, the raw material does not. The skimming of milk for cheese and not branding it just what it is, is cheating. It is adulteration by subtraction. The making bogus butter is adulteration by addition. The factory has done an irreparable injury to the cheese industry of Ohio. I do not think the factory men have been consciously dishonest, but by skimming they have committed a great wrong. I believe farmers must refuse to sell milk to manufacturers of skimmed milk cheese. The butter business is better than the cheese industry because it admits of an unobstructed sale to the consumer without the interference of the middleman. The farmer who does not sell a finished product will not be prosperous.—W. J. Chamberlain, in Rural World.

How to Make Silos Effective.

A silo may be made of any size—16 feet square or only 5 or 6 feet. It is not the size but the total exclusion of the air that makes the silo effective. Ensilage has been made in barrels or boxes, and thus for a small quantity a small silo may be made as well as the largest. A book on the subject of making and using silos, by Prof. Cook, may be procured through any local bookseller. The construction of a silo, however, is a simple matter. The foundation must be perfectly airtight and dry; the walls are double, with air proof building paper between the boards. The inner boarding should be matched so as to make a smooth wall, and covered with tar, as paint, to close the pores of the wood. The roof must be tight and the ensilage must be tightly packed and permitted to heat to 140 or 150 degrees before it is covered, and then covered with double boards. The ensilage is taken from the top as it is wanted for use.—American Dairyman.

DOMESTIC CONCERNS.

—Fried Bread: Cut the bread in medium thick slices and fry brown in a hot-buttered spider. The bread should be first placed in the hot butter. Pour over it a little boiling water, and turn quickly. Then cover it for a few moments and serve.—Western Rural.

—Stewed Celery: Take four heads of celery, wash thoroughly, cut off any discolored spots or leaves, and divide into two-inch lengths. Stew those for about an hour in water. Then remove them carefully with a slice, strain the water the celery was stewed in, and add to it some nice thickened gravy; let all stew for about an hour longer. Arrange the celery on a dish, and pour the gravy over.—The Home.

—Fried Beets: Boil a few beets until tender, then cut them in small, long pieces. Put them in a stew pan with a teaspoonful of vinegar, the juice of one lemon, a pinch of sugar, very little grated nutmeg, salt and pepper and two tablespoonfuls of soup stock or fresh butter. Put the sauce pan on the back of the range and let it simmer half an hour, stirring occasionally. Boiling the beets in soup is an improvement.—Boston Budget.

—Egg Rolls: Sift two teaspoonfuls of baking powder into a pint of flour and rub a piece of butter as large as a butternut into the same. Add two well-beaten eggs and a pinch of salt to one cupful of sweet milk, add the prepared flour and enough more to make a soft dough. Handle as little as possible, roll out thin, cut with large round cutter, butter the top slightly, fold over on the other half and bake in a hot oven.—N. Y. Ledger.

—Fruit Cake: Twelve eggs, one and one-half pound each of butter, sugar and flour, two pounds each of raisins and currants, one pound citron, half pint molasses, one ounce each of nutmegs, mace and cloves, one and one-half glass of jelly—grape is best—more flour if needed. Put dough in pans, set in steamer, taking care that the cover is made to fit very tight; if necessary, put cloth under the lid and shut it down on it, taking care that it does not touch the cake. Steam two hours and bake one hour.—Chaperone.

—Cafe Frappe: Take one quart of cream, one cup of powdered sugar, one tablespoonful of vanilla. Whip very stiff. Divide the cream into two equal parts; into one beat one-fourth of a cup of strong black coffee. Put the whipped cream into the bottom of the mold, hold the cream with the coffee in it over the mold, and pour it directly into the center of the whipped cream, so forcing the white cream up around the sides of the mold. Pack it in salt and ice the same as ice cream and let it stand from six to eight hours in winter; longer in warm weather.—Boston Budget.

—Strawberry Cream: Sugar a quart of berries, using a cup of powdered sugar, and set away for an hour or two; mash through a fine sieve; melt over the fire half an ounce of gelatin, which has soaked for half an hour in barely enough strawberry juice to cover it; add two tablespoonfuls of sugar, the juice of half a lemon and pour through the sieve into the bowl of berries; beat thoroughly; add a pint of whipped cream, mix lightly through and pour into a mold. Set on the ice until thoroughly chilled. Serve with or without cream.—American Agriculturist.

TANSY FOR ANTS.

A Quick and Effective Way of Routing the Insect Pest.

A sure remedy for these summer pests is here outlined. Big, fat, black antimires and little, lean, scurrying red ants have put in their early appearance at our house for the past few summers, taking possession of every pantry and cellar shelf where food is kept and persistently remaining until frost comes. I have tried washing the shelves in alum water, and circling the sugar bucket and cake box with chalk marks, thick and broad, to strand the foraging, and sifted sponges full of sugar, and, when filled with victims, have plunged them into hot water. I have put sulphur bags and borax lumps and cedar chips and tarred paper strips in my cupboards and ice chest, but with no other result than to see both black and red ants scampering as lively as ever over the supposed exterminator.

"Why don't you try tansy?" the new girl said one morning last spring. "Mother always drives them off by putting tansy leaves on her shelves." I had little faith in the bundle of green-leafed stalks she picked that day and laid on every food shelf in cupboard, pantry and cellar—less faith, even, than I had in my plump little sulphur bags and wobbly chalk marks. But the tansy did it; for there was a stampede of ants, big and little, black and red, presently from my shelves. A thorough routing; for from that day to this, six weeks, not one ant have we seen, though we leave the sirup can unsealed and the sugar bucket on the shelf.—Household.

AN IMPROVISED FILTER.

A Simple Method of Making Bad Water Fit to Drink.

It often happens that drinking water is very impure, and contains much matter which it is important to get rid of before disinfecting by boiling. A few strands of candle wick, a piece of cheesecloth, or any other clean cloth which has been washed, as a clean towel, may be improvised as a filter. Provide two vessels, the one containing the water to be filtered placed above the receiving vessel; place one end of the cloth or wick in the vessel above, and let the other end hang over the lower vessel. As the water is descending from the upper to the lower vessel, the cotton fibers will entangle the suspended matter, and the water, as it drops into the lower vessel, will be freed from much of the dirt which it contains. The water can then be boiled and made comparatively wholesome for drinking water. This method of filtering is useful in tenting, where wholesome clean water is not at hand.—Good Health.

BOOK-MAKING.

TYPES for the Greek alphabet were first cast at Aldus in 1476.

THE first Bible printed with a date was finished by Faust in 1462.

CLOTH binding superseded the boards commonly employed about 1831.

TYPESETTING machines were suggested for book work as early as 1842.

IN 1274 a very finely written Bible was sold for 50 marks—about $170.

BOOKS were printed in Paris from stereotype plates by Didot in 1798.

VELLUM first came into use as a material for book-binding about 1510.

IN 1827 books were printed in raised characters for the use of the blind.

THE rolling machine was substituted for the beating hammer about 1630.

THE first book printed in America is said to be an almanac at Boston in 1639.

ANCIENT books were sometimes written on slabs of wood, ivory or metals.

RUBBER backs to account books and other large volumes were introduced in 1841.

THE first books printed from types faced with copper came from the press in 1850.

FOREIGNERS.

HERR KUHN, the oldest actor in Germany, celebrated two weeks ago the sixtieth anniversary of his first appearance on the stage.

MISS BALFOUR, sister of the English conservative leader, is now traveling in Africa, and at last advices was the guest of Mr. Cecil Rhodes at Cape Town.

LADY MARIE FORESTER, who recently died in England, was the woman who selected Florence Nightengale for hospital work in the Crimea, and thus inaugurated the modern system of nursing.

EX-EMPRESS CHARLOTTE, the widow of the late Emperor Maximilian of Mexico, shot in 1867, and sister of the Belgian king, is reported by the latest Brussels papers as being in a worse condition than ever.

ISAAC PITMAN, now of Bath, Eng., the inventor of what is popularly known as the Pitman system of Phonography, has been knighted by Queen Victoria. He is now in his eighty-second year, but still deeply interested in the work of spelling reform, which was largely an outgrowth of his system of writing according to sound.

ABOUT THE WOMEN.

MRS. VANDERBILT rejoices in the possession of the most beautiful cat in the world. It cost one thousand dollars.

THE widow of Gen. Boulanger intends, it is said, to spend the remainder of her life in the French colony at Tunis.

QUEEN VICTORIA is said to be a very bad speller and addicted to the habit of writing illegibly to hide errors in orthography.

A PORTRAIT of Emily Bronte, the only one known, has recently been discovered and will soon be engraved for publication.

BELVA LOCKWOOD is sixty-three years old. She began teaching school at the age of fourteen and was married four years later.

NEXT to her dolls, the little queen of Holland values most a collection of wax figures sent from Batavia and clad in the picturesque peasant costume of the Javanese.

LADY CONSTANCE LYTTON is one of the able woman journalists of to-day. She inherits her love for literary work and qualifications for writing from her father, the late Earl Lytton.

MISS DR. HAMILTON, of England, who is doctoring the ameer's family in Cabul, has a guard of natives to look after her. The Indian government has disowned all responsibility for her safety.